

Transportation Safety Overview Module 1

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Course Outline

- ▶ Overview of vehicle accidents
- ▶ Transportation accident statistics
- ▶ Costs to employers
- ▶ Work related crashes
 - Work-related deaths by job and age
 - Types of crashes
- ▶ Reducing transportation accidents
 - Causes of accidents and prevention
 - Defensive driving
 - Workplace safe driving programs
 - Commercial driver safety

Course Objectives

- ▶ Be able to identify the leading cause of on-the-job fatalities in the U.S.
- ▶ Be able to recognize the types of vehicles involved resulting in the highest death rate for occupants
- ▶ Be able to identify the type of accident that results in the majority of occupant deaths

Course Objectives

- ▶ Be able to recognize the average cost to employers for vehicle crashes resulting in injury
- ▶ Be able to identify the age group involved in the highest number

of vehicle work-related deaths

- ▶ Be able to recognize the major causes of vehicle crashes

Traffic Crashes

- ▶ Traffic crashes are the leading cause of on-the-job fatalities in America

Motor Vehicle Crashes

- ▶ Are one of the largest contributors to Workers' Compensation costs
- ▶ Are one of the costliest but the least addressed loss in the workplace

Workday Travel

- ▶ The most dangerous part of the workday for any employee is the time they spend in their vehicle traveling to and from work or traveling for work

Fatal Vehicle Incidents

- ▶ More than 2,000 deaths a year result from occupational motor vehicle incidents. That number is more than 30 percent of the annual number of fatalities from occupational injuries. These deaths include driver and passenger deaths in highway crashes, farm equipment accidents, and industrial vehicle incidents, as well as pedestrian fatalities.

Death Rate

- ▶ Annual number of work-related roadway deaths has increased to a rate of 1.2 deaths per 100,000 FTE employees
 - Majority of crash victims – male (89%)
 - Age group with highest toll – 35-54 (47%)

Transportation Accident Statistics

► In 2005 traffic crashes;

- 43,443 people we killed
- 2,699,000 injured
- 4,304,000 crashes involved property damage only

Transportation Accident Statistics

- An average of 119 persons died each day in motor vehicle crashes in 2005, - one every twelve minutes
- Motor vehicle crashes are the leading cause of death for every age from 3 through 33
- Vehicle occupants accounted for 76% and motorcycle riders accounted for 10% of traffic fatalities in 2005

Transportation Accident Statistics

► Total Highway fatalities in 2003 (42,643)

- Passenger car occupants 19,460
- Motorcyclists 3,661
- Light truck occupants 12,444
- Large truck occupants 723
- Bus occupants 40
- Pedestrians 4,749
- Pedacyclists 622
- Other 944

Transportation Accident Statistics

► Of the 42,643 fatalities:

- 25,136 were a result of road departure
- 9,213 were intersection related
- 4,749 involved pedestrians

Transportation Accident Statistics

- Every year more than 2.7 million intersection crashes occur (45% of all crashes)
- More than one intersection fatality occurs every hour
- In 2003, red light running accounted for 934 deaths and approximately 176,000 injuries

Transportation Accident Statistics

- ▶ Pedestrians – Constitute the second largest category of motor vehicle deaths after occupants

Vehicle Crashes

- ▶ 1 fatality every 12 minutes
- ▶ 1 injury every 10 seconds
- ▶ 1 crash every 5 seconds
- ▶ 1 property damage crash every 7 seconds
- ▶ Cost of motor vehicle crashes- \$89 billion annually

Teen Fatalities

- ▶ Traffic crashes are the leading cause of teen fatalities accounting for 44% of teen deaths in the U.S.
- ▶ In 2002, there were 4,530 fatalities (age 16-19)
 - Unrestrained 2,647
 - Restrained 1,540
 - Unknown 343

Teen Fatalities

- ▶ The risk of motor vehicle crashes is higher among 16- to 19-year-olds than among any other age group
- ▶ Per mile driven, teen drivers ages 16 to 19 are four times more likely than older drivers to crash
- ▶ In 2003, teenagers accounted for 10 percent of the U.S. population and 13 percent of motor vehicle crash deaths

Older Drivers

- ▶ Motor vehicle-related deaths and injuries among older adults are rising. During 1990–1997, the number of deaths rose 14% and the number of nonfatal injuries climbed 19%
- ▶ Drivers ages 65 and older have higher crash death rates per mile driven than all but teen drivers

- ▶ The 65 and older age group is the fastest growing segment of the population; more than 40 million older adults will be licensed drivers by 2020

Average Cost to Employers

- ▶ \$16,500/crash (all crashes)
- ▶ \$0.158/vehicle-miles traveled
- ▶ \$504,400/fatal injury
- ▶ \$76,300/injury (all injury)
- ▶ \$73,750/nonfatal injury

Economic Costs of Traffic Crashes in 2000

- ▶ \$230.6 billion - Total societal cost of motor vehicle crashes
- ▶ \$60 billion - Cost to Employers
- ▶ \$40 billion from on-the-job crashes
- ▶ \$20 billion off-the-job crashes for workers and their dependents

Employer Costs of Motor Vehicle Injuries Employer Costs per Person Involved in a Crash **Unrestrained vs. Restrained**

- ▶ On-the-Job Crash
 - Unrestrained - \$27,750
 - Restrained - \$11,310
- ▶ Off-the-Job Crash
 - Unrestrained - \$2,980
 - Restrained - \$600

Work-Related Crashes

- ▶ Leading cause of occupational fatality
 - More than 1,300 deaths/year between 1992 and 2002
 - Accounted for 23% of all occupational deaths in 2000
 - While other causes of occupational death decreased, crash fatalities increased steadily between 1992 and 1999

Who is Involved?

Who is Involved?

Roadway Fatalities Among Older Workers

- ▶ Roadway crashes are the leading cause of occupational fatalities for older workers in the U.S. Between 1992 and 2002, nearly 3,200 workers aged 55 years and older died in motor vehicle crashes on public highways, accounting for 22% of all occupational fatalities among this worker group

Who is Involved?

What Type of Crash?

What Type of Crash?

Crash Data

- ▶ 25-50 percent of crashes caused by distracted driving
- ▶ 40 percent of crashes are alcohol-related
- ▶ 30 percent of crashes are speed-related
- ▶ 52-58% of occupants aren't belted in fatal crashes

Reducing Transportation Accidents

- ▶ Additional training modules have been developed as part of this series to assist employers in the education and training of their workforce involved in travel for work or commuting to and from work. Highlights of the modules are outlined on the next 4 slides.....

Accident Prevention

- ▶ Major causes of accident are explored including:
 - Distracted drivers

- Driving under the influence
- Excessive speed
- Driver fatigue
- Aggressive driving

Defensive Driving

- ▶ Defensive driving points
- ▶ Avoiding rear-end collisions
- ▶ Backing safety
- ▶ Avoiding deer crashes
- ▶ Inclement weather driving
- ▶ Railroad crossings
- ▶ Seat belt use

Workplace Safe Driving Programs

- ▶ Employers who implement safe driving programs reap benefits that include:
 - Reduction in injuries and fatalities
 - Lower operating costs
 - Improved employee relations and higher morale
 - Enhanced corporate image

Commercial Driver Safety

- ▶ A look at DOT regulations for commercial drivers including:
 - Pre and post trip inspections
 - Cargo securement
 - Hours of service regulations
 - Driver security awareness
 - Hazardous material

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Learning Exercise

1. The leading cause of on-the-job fatalities in the U.S. is
 - a. Heart attacks
 - b. Traffic crashes
 - c. Falls
2. More than _____ deaths a year result from occupational motor vehicle incidents.
 - a. 10,000
 - b. 5,000
 - c. 2,000

Learning Exercise

3. There were over 40,000 highway fatalities in 2003.
 - a. True
 - b. False
4. The types of vehicles involved in the most fatalities in 2003 were:
 - a. Passenger cars
 - b. Motorcycles
 - c. Pick ups

Learning Exercise

5. The type of accident that resulted in the majority of vehicle occupant deaths was:
 - a. Intersection related
 - b. Pedestrian related
 - c. A result of road departure

6. The average cost to employers for vehicle crashes resulting in injury is approximately \$16,000.
- a. True
 - b. False

Learning Exercise

7. The age group involved in the highest number of vehicle work-related deaths is:
- a. Under 21
 - b. Over 55
 - c. 35-54
8. The major causes of vehicle crashes include:
- a. Distracted drivers
 - b. Influence of drugs or alcohol
 - c. Fatigue
 - d. All of the above

Answer Key

- 1. b
- 2. c
- 3. a
- 4. a
- 5. c
- 6. b
- 7. c
- 8. d

Accident Prevention I

Module 2

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Course Outline

- ▶ Motor vehicle accidents and causation
- ▶ Driver distractions
- ▶ Driving under the influence of drugs or alcohol
- ▶ Excessive speed

Course Objectives

- ▶ Be able to identify typical driver distractions and their effect on driving ability
- ▶ Be able to recognize the highest percentage type of driver distraction
- ▶ Be able to identify the approximate annual percentage of alcohol-related traffic deaths
- ▶ Be able to recognize the annual cost to the U.S. economy of alcohol-related crashes

Course Objectives

- ▶ Be able to identify some prevention strategies to reduce alcohol-related driving
- ▶ Be able to identify the percent of all fatal crashes in which speed is a factor
- ▶ Be able to recognize the effects of excessive speed on your stopping ability
- ▶ Be able to identify the three major disciplines necessary for a comprehensive speed management program

Motor Vehicle Accidents

- ▶ In the United States motor vehicle crashes of all types are the leading cause of lost work time and on-the-job fatalities
- ▶ In 2004 transportation incidents were the number one cause of on-the-job deaths with 2,460 fatalities out of a total of 5,703 fatal occupational injuries

recorded

What Causes Accidents?

- ▶ Driver distractions
- ▶ Driving under the influence of alcohol or drugs
- ▶ Excessive speed

Driver Distractions

- ▶ Distraction happens when a driver is slow to recognize a potential hazard because something inside or outside the vehicle draws the driver's attention away from the road

Driver Distractions

- ▶ Approximately 25% of crashes are distraction related
- ▶ Social and economic costs for these crashes approach an estimated \$40 billion annually

Percent of Drivers in Crashes Who are Distracted

Distractions Affect Driver Ability

- ▶ Drivers react more slowly
- ▶ Drivers often fail to recognize potential hazards
- ▶ Drivers reduce their "margin of safety"

Typical Distractions

- ▶ Cell phones
- ▶ Adjusting the radio, CD player
- ▶ Attending to children
- ▶ Eating or drinking
- ▶ Talking to a passenger
- ▶ Attempting to read while driving

- Reacting to conditions outside the vehicle

Typical Distractions

Driver Distractions

Nature of Distraction

By Age of Driver

The Distracted Drivers Test

- This quiz was created for the NBC current events program. "Dateline," by leading scientists who are studying driver distraction.
- It is not intended to be scientifically valid, but should serve as a guide determining your risk factor at the wheel.
- It is intended to make you more aware of any dangerous driving habits you may have.

The Distracted Drivers Test

As you answer each question, check the correct answer and tally the corresponding points.

1) When you are driving, do you:

- | | |
|---|-----------|
| A. Never or rarely use a cell phone | 0 Points |
| B. Use a hand-held cell phone | 40 Points |
| C. Use a hands-free cell phone | 30 Points |
| D. Often talk on the phone and at the same time do things like eat, read, drink, smoke or write | 50 Points |

2) How long do you think you can safely look away from the road?

- | | |
|----------------|-----------|
| A. One Second | 10 Points |
| B. Two Seconds | 20 Points |

- C. Three Seconds 30 Points
- D. Four Seconds 40 Points
- E. Five Seconds 50 Points

3) When driving, are you:

- A. Usually relaxed 0 Points
- B. Often running late but not stressed about it 10 Points
- C. Often running late and anxious to make up time 40 points

4) Describe your normal driving routine: (Check each that applies)

- A. Long Commute 15 Points
- B. Congested Traffic 25 Points
- C. Passengers 15 Points
- D. Children 25 Points
- E. Pets 50 Points
- F. None of the above 0 Points

5) What is your age:

- A. 16 to 25 35 Points
- B. 26 to 54 0 Points
- C. 55 to 69 15 Points
- D. 70 plus 35 Points

6) What do you do in dense traffic:

- A. Try to follow the car in front of me 35 Points
- B. Maintain a safe following distance, even if cars have to cut in front of me. 10 Points

- C. Try to avoid driving during peak traffic 0 Points

7) When your cell phone rings while you are driving, what do you do:

- A. Answer it when it rings 40 Points
B. Answer it when safe to do so 15 Points
C. Leave it turned off (or, don't own one) 0 Points

8) What do you regularly do when you drive (Check all that apply and tally the points)

- A. Adjust temperature/radio and other controls 10 Points
B. Adjust mirrors, seat or seatbelt 15 Points
C. Change cassettes or CDs 20 Points
D. Eat, brush hair, apply makeup or shave 25 Points
E. Read (maps, directions newspaper, etc.) 45 Points
F. None of the above 0 Points

9) What is the farthest you will reach for something while driving?

- A. Drink holders 5 Points
B. Passenger seat 10 Points
C. Glove box 20 Points
D. Floor 30 Points
E. Back seat or floor 40 Points

10) When you drive, do you:

- | | |
|--|-----------|
| A. Often listen to music or the radio | 10 Points |
| B. Often listen to books on tape | 30 Points |
| C. Sometimes get so caught up in conversations or whatever you're listening to that you get lost or miss an exit | 50 Points |
| D. None of the above | 0 Points |

Are You At Risk?

Tally up your score.

Check the following key to determine your driving risk factor:

<u>Points</u>	<u>Distraction Factor</u>
0 to 110	Low Risk
111 to 190	Moderate Risk
191 + Points	High Risk

Driving Under the Influence of Drugs or Alcohol

- During 2005, 16,885 people in the U.S. died in alcohol-related motor vehicle crashes, representing 39% of all traffic-related deaths
- In 2005, nearly 1.4 million drivers were arrested for driving under the influence of alcohol or narcotics. That's less than one percent of the 159 million self-reported episodes of alcohol-impaired driving among U.S. adults each year

Driving Under the Influence of Drugs or Alcohol

- Drugs other than alcohol (e.g., marijuana and cocaine) are involved in about 18% of motor vehicle driver deaths. These other drugs are generally used in combination with alcohol
- More than half of the 414 child passengers ages 14 and younger who died

in alcohol-related crashes during 2005 were riding with the drinking driver

- ▶ In 2005, 48 children age 14 years and younger who were killed as pedestrians or pedalcyclists were struck by impaired drivers

Who is Involved?

- ▶ Male drivers involved in fatal motor vehicle crashes are almost twice as likely as female drivers to be intoxicated with a blood alcohol concentration (BAC) of 0.08% or greater. It is illegal to drive with a BAC of 0.08% or higher in all 50 states

Who is Involved?

- ▶ In 2005, 16% of drivers ages 16 to 20 who died in motor vehicle crashes had been drinking alcohol

Who is Involved?

- ▶ Of the 1,946 traffic fatalities among children ages 0 to 14 years in 2005, 21% involved alcohol
- ▶ Among drivers involved in fatal crashes, those with BAC levels of 0.08% or higher were nine times more likely to have a prior conviction for driving while impaired (DWI) than were drivers who had not consumed alcohol

Who is Involved?

- ▶ Among motorcycle drivers killed in fatal crashes, 30% have BACs of 0.08% or greater
- ▶ Nearly half of the alcohol-impaired motorcyclists killed each year are age 40 or older, and motorcyclists ages 40 to 44 years have the highest percentage of fatalities with BACs of 0.08% or greater

Costs

- ▶ Each year, alcohol-related crashes in the United States cost about \$51 billion

Good News

- ▶ Over the past 20 years, alcohol-related fatal crash rates have decreased by 60 percent for drivers ages 16 to 17 years and 55 percent for drivers ages

18 to 20 years

Prevention Strategies

- ▶ Implement and enforce strategies such as minimum legal drinking age laws and "zero tolerance" laws for drivers under 21 years of age
- ▶ Implement more sobriety checkpoints -Results indicate that sobriety checkpoints consistently reduced alcohol-related crashes, typically by about 20 percent

Prevention Strategies

- ▶ Stronger state DUI prevention activities including legislation, enforcement, and education
- ▶ School-based education programs to reduce riding with a drinking driver
- ▶ Promptly suspending the driver's licenses of people who drive while intoxicated

Prevention Strategies

- ▶ Mandatory substance abuse assessment and treatment for driving-under-the-influence offenders
- ▶ Reducing the legal limit for blood alcohol concentration (BAC) to 0.05%
- ▶ Implementing compulsory blood alcohol testing when traffic crashes result in injury
- ▶ Raising state and federal alcohol excise taxes

Excessive Speed

- ▶ Speeding is a factor in 30 percent of all fatal crashes
- ▶ About 1,000 fatalities result from speeding-related motor vehicle traffic crashes every month.
- ▶ The number of speeding-related fatalities is the highest in arterial roads followed by local/collector roads and finally interstates

Excessive Speed

- ▶ About 40 percent of speeding-related fatalities occurs on a curve
- ▶ Male drivers are more likely to be involved in speeding-related fatal crashes than female drivers among drivers of all ages
- ▶ About 41 percent of intoxicated drivers (BAC= 0.08+) involved in fatal crashes were speeding

Speeding in 2005

- ▶ Speeding was a contributing factor in 30% of all fatal crashes
- ▶ 13,113 lives were lost in speeding related crashes
- ▶ The economic cost to society of speeding related crashes is estimated by NHTSA to be \$40.4 billion per year

Excessive Speed

- ▶ Speeding reduces a driver's ability to steer safely around curves or objects in the roadway
- ▶ Extends the distance necessary to stop a vehicle
- ▶ Increases the distance a vehicle travels while a driver reacts to a dangerous situation

Trend of Speeding-Related Fatalities by State

How Far Do you Travel

- ▶ Are you aware of your speed?
- ▶ How far does your vehicle travel in one second?
- ▶ If you bend down to change the radio station, get your drink or light your cigarette, how far did your car travel?

Speed and Distance Formulas

- ▶ 1 MPH @ 1 Second = 1.5 FPS
- ▶ 10 MPH @ 1 Second = 15 FPS

- ▶ 20 MPH @ 1 Second = 30 FPS
- ▶ 30 MPH @ 1 Second = 45 FPS
- ▶ 40 MPH @ 1 Second = 60 FPS
- ▶ 50 MPH @ 1 Second = 75 FPS

Speed and Distance Formulas

- ▶ 60 MPH @ 1 Second = 90 FPS
- ▶ 70 MPH @ 1 Second = 105 FPS
- ▶ 80 MPH @ 1 Second = 120 FPS
- ▶ 90 MPH @ 1 Second = 135 FPS
- ▶ 100 MPH @ 1 Second = 150 FPS

Reaction Time

- ▶ At 70 mph the time that it took you to change the radio station, look up and react by hitting the brakes has caused you to travel almost the length of a football field.

- ▶ In your neighborhood, that 2 ½ seconds caused you to travel the length of an average city block. So if a child ran out in the middle of the street.....

When You Hit a Pedestrian

- ▶ At 20 mph, 5% will die
- ▶ At 30 mph, 45% will die
- ▶ At 40 mph, 85% will die
- ▶ At 50 mph, almost all will die

Time & Space to Stop

- ▶ At 20 mph, it takes you 47 feet to stop your car
- ▶ At 30 mph, the distance almost doubles (88 feet)
- ▶ At 40 mph, it almost doubles again (149 feet)

Speed Management Program

- ▶ Need cooperation and coordination among the following disciplines:
- ▶ Engineering
- ▶ Enforcement
- ▶ Educational

Speed Reduction Strategies

- ▶ Increased enforcement of speed-related violations
- ▶ Use of portable radar trailers displaying the speed of passing vehicles
- ▶ Placement of speed reduction signs
- ▶ Education programs in the community and at high schools and colleges

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Learning Exercise

1. Drivers react more slowly when distracted and fail to recognize potential hazards.
 - a. True
 - b. False
2. Which of the following causes the highest percentage of driver distractions?
 - a. Other occupants
 - b. Adjusting the radio
 - c. Things outside the car
 - d. Eating, drinking

Learning Exercise

3. Which of the following figures represents the approximate annual percentage of alcohol-related traffic deaths
 - a. 39%
 - b. 50%
 - c. 25%
 - d. <15%

4. Which of the following monetary figures closely represents the annual cost to the U.S. economy of alcohol-related crashes
- a. 25 million
 - b. 50 billion
 - c. 25 billion
 - d. 75 million

Learning Exercise

5. Female drivers involved in fatal motor vehicle crashes are almost twice as likely as male drivers to be intoxicated above the legal driving limit.
- a. True
 - b. False
6. Implementation of sobriety checkpoints has shown to reduce alcohol-related crashes.
- a. True
 - b. False

Learning Exercise

7. Speed has been identified as a factor in what percentage of fatal crashes?
- a. 10%
 - b. 15%
 - c. 30%
 - d. 20%
8. Female drivers are more likely to be involved in speeding-related fatal crashes than male drivers among drivers of all ages.
- a. True
 - b. False

Learning Exercise

9. Traveling at excessive speeds can increase the distance a vehicle travels while a driver reacts to a dangerous situation.
- a. True
 - b. False
10. Which of the following disciplines are necessary for a comprehensive speed management program?
- a. Education
 - b. Enforcement
 - c. Engineering
 - d. All of the above

Answer Key

1. a
2. c
3. a
4. b
5. b
6. a
7. c
8. b
9. a
10. d

Accident Prevention II Module 3

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Course Outline

► Fatigued Driving

- Statistics
- Risk groups
- Incidence time of day, road types
- Risk factors causing fatigue
- Techniques used to avoid falling asleep
- Driver education
- Reducing fatigue driving crashes

Course Outline

► Aggressive Driving

- Types of aggressive driving

- Causes and factors of aggressive driving
- Characteristics of aggressive drivers
- Road rage
- Responding to an aggressive driver
- Aggressive driving test

Course Objectives

- ▶ Be able to identify the main risk groups for fatigued driving
- ▶ Be able to recognize the risk factors involved in fatigued driving
- ▶ Be able to recognize the time of day or types of roads that are more likely to have sleep-related accidents
- ▶ Be able to identify tactics that work and don't work to fight off fatigue

Course Objectives

- ▶ Be able to identify ways of reducing fatigued driving crashes
- ▶ Be able to recognize various strategies and education topics to help reduce sleep-related accidents and make drivers more aware of the dangers of fatigued driving
- ▶ Be able to identify the typical types of aggressive driving behavior

Course Objectives

- ▶ Be able to recognize characteristics of the aggressive driver
- ▶ Be able to recognize the difference between "road rage" and other aggressive driving incidents
- ▶ Be able to identify proper responses to an aggressive driver

What Causes Accidents ?

- ▶ Driver fatigue
- ▶ Aggressive driving

Fatigued Driving

- ▶ The National Highway Traffic Safety Administration estimates that there are 56,000 – 100,000 sleep-related road crashes annually in the U.S.
- ▶ Result in 40,000 injuries and 1,550 fatalities
- ▶ Approximately 17% of road accidents are sleep related
- ▶ 95.9% of annual drowsy driver crashes involve drivers of *passenger* vehicles

Fatigued Driving

- ▶ After two or three hours of driving, the central nervous system usually becomes fatigued, the senses become dulled and perception levels are lowered
- ▶ Body and physical fatigue are caused by sitting in a forced posture in a fixed position with insufficient back support
- ▶ Drowsiness while driving is caused by lack of visual or physical stimulation

Fatigued Driving

- ▶ Fatigue reduces reaction time, alertness and concentration so that the ability to perform attention-based activities is impaired
- ▶ Main risk groups:
 - Male drivers aged 16-29
 - Shift workers, students
 - People with sleep problems
 - People who drive between midnight and 6:00 a.m.

Risk Factors

- ▶ Sleep loss
- ▶ Driving a substantial number of miles each year
- ▶ Driving a substantial number of hours each day
- ▶ Driving in mid-afternoon hours especially for older people
- ▶ Use of sedating medications
- ▶ Consumption of alcohol

Sleep Problems

- ▶ Many people with the following conditions are undiagnosed and untreated and are unaware of their increased risk:

- Sleep apnea (Brief interruptions of airflow and loss of oxygen while sleeping, resulting in poor and fragmented sleep)
- Narcolepsy (a disorder of the sleep-wake mechanism which can cause excessive daytime sleepiness)

Time of Day

- ▶ Sleep related accidents are highest in the early hours of the morning, between 2:00 and 6:00 a.m., and in the mid afternoon, between 3:00 and 4:00 p.m.
- ▶ Younger drivers fatigue more often in the early hours of the morning
- ▶ Older drivers tend to fall asleep at the wheel in the afternoon

Road Types

- ▶ Roads which involve sustained monotonous driving, with little visual stimulus for the driver, and where drivers are not required to attend to either the vehicle's controls or respond to multiple road users and junctions, are more likely to have sleep-related accidents

Danger Signals for Drowsy Drivers

- ▶ Your eyes close or go out of focus by themselves
- ▶ You have trouble keeping your head up
- ▶ You can't stop yawning
- ▶ You have wandering, disconnected thoughts

Danger Signals for Drowsy Drivers

- ▶ You don't remember driving the last few miles
- ▶ You drift between lanes, tailgate, or miss traffic signs
- ▶ You keep jerking the car back into the lane
- ▶ You have drifted off the road and narrowly missed crashing

Tactics Used by Drivers to Avoid Falling Asleep

- | | |
|-----------------------------|-----|
| ▶ Open windows/turn up AC | 68% |
| ▶ Stop and go for a walk | 57% |
| ▶ Listen to radio, cassette | 30% |
| ▶ Talk to a passenger | 25% |
| ▶ Drink coffee | 14% |
| ▶ Other | 15% |
- * Only tactics that had any affect beyond 10-15 minutes were intake of caffeine of at least 150mg and a nap of around 15 minutes

Driver Education on Fatigue

- ▶ Dangers of driving when tired
- ▶ Signs of becoming too tired to continue driving
- ▶ Ineffectiveness of common tactics
- ▶ Relative effectiveness of caffeine and naps
- ▶ Need to plan journeys
- ▶ Resting well before long journeys
- ▶ Increased risk that drugs, alcohol, medications, and illness generate
- ▶ Types of journeys that carry the highest risk

Reducing Fatigued Driving Crashes

- ▶ Make roadways safer for fatigued drivers
- ▶ Provide safe stopping and resting areas
- ▶ Increase driver awareness of the risks of fatigued driving and promote driver focus, and
- ▶ Implement programs that target populations at increased risk of fatigued driving crashes

Strategies

- ▶ Install shoulder and/or centerline rumble strips and other roadway improvements
- ▶ Improve access to safe stopping and resting areas
- ▶ Conduct education and awareness campaigns targeting the general driving public

Strategies

- ▶ Strengthen graduated driver licensing requirements for young novice drivers
- ▶ Encourage trucking companies and other fleet operators to implement fatigue management programs
- ▶ Encourage employers to offer fatigue management programs to employees working nighttime or rotating shifts

Aggressive Driving

- ▶ "A person who operates a motor vehicle in a selfish, bold or pushy manner, without regard for the rights or safety of the other users of the streets and highways".
- ▶ "The operation of a motor vehicle in a manner that endangers or is likely to endanger persons or property"

Aggressive Driving Incidents

- ▶ Almost 13,000 people have been injured or killed from 1990 to 1997 in crashes caused by aggressive driving.

Types of Aggressive Driving

- ▶ Running stop signs
- ▶ Disobeying red lights
- ▶ Making frequent, unnecessary lane changes
- ▶ Passing on the right
- ▶ Flashing their lights, honking horns
- ▶ Excessive speed
- ▶ Make hand and facial gestures
- ▶ Passing a stopped school bus
- ▶ racing another driver

Causes of Aggressive Driving

- ▶ More vehicles on the road
- ▶ The number of vehicle miles driven each year is up 35% in the past ten years
- ▶ People are busier and time is at a premium

- ▶ Road congestion causes frustration

Aggressive Driving Factors

- ▶ Traffic delays
- ▶ Running late
- ▶ Disregard for others
- ▶ Anonymity
- ▶ Disregard for the law
- ▶ Habitual or clinical behavior

Characteristics of the Aggressive Driver

- ▶ High-risk drivers, more likely to drink and drive, speed, or drive unbelted
- ▶ Their vehicle provides anonymity, allowing them to take out their frustrations on other drivers
- ▶ Their frustration levels are high, concern for other motorists, low

Characteristics of the Aggressive Driver

- ▶ They consider vehicles as objects and fail to consider the human element involved; therefore, they seldom consider the consequences of their actions
- ▶ Aggressive drivers think of driving as an aggressive sport
- ▶ Generally blame others and do not see themselves as a problem

Characteristics of the Aggressive Driver

- ▶ Aggressive drivers think they are in control when they are not
- ▶ Admit to being impatient--e.g., they do not like to let others pass.

Types of Aggressive Behavior

- ▶ Aggressive tailgating
- ▶ Lights flashed at them because the other motorist was annoyed
- ▶ Aggressive or rude gestures
- ▶ Deliberately obstructed or prevented from moving their vehicle
- ▶ Verbal abuse
- ▶ Physically assault

Violent Road Behavior

- ▶ "Road Rage" The angry and violent behaviors at the extreme of the aggressive driving spectrum
- ▶ These violent acts may range from a physical confrontation to an assault with a motor vehicle or possibly a weapon

Road Rage

- ▶ From January 1990 to September 1, 1996, a period of 6 years and 8 months, there were at least 10,037 incidents of reported road rage in the United States
- ▶ 218 men, women, and children are known to have been murdered and 12,610 people injured as a result of these 10,037 incidents
- ▶ The number of aggressive driving cases reported has increased every year from 1990 -1996

Triggers For Violent Traffic Disputes

- ▶ *"It was an argument over a parking space..."*
- ▶ *"He cut me off"*
- ▶ *"She wouldn't let me pass"*
- ▶ *"Nobody gives me the finger..."*
- ▶ *"The bastard kept honking and honking his horn..."*
- ▶ *"He/she was driving too slowly"*

Triggers For Violent Traffic Disputes

- ▶ *"She kept crossing lanes without signaling -- maybe I overreacted but it taught her a lesson."*
- ▶ *"I never would have shot him if he hadn't rear-ended me"*
- ▶ *"He practically ran me off the road -- what was I supposed to do?"*
- ▶ *"We was dissed."*

Weapons Used in Road Rage Incidents

- ▶ In approximately 4,400 of the 10,037 known incidents, the perpetrator used a firearm, knife, club, fist, feet or other standard weapon for the attack
- ▶ In 2,300 cases the aggressive driver used their own vehicle
- ▶ In 1,250 cases the aggressive driver used their own vehicle *and* a

standard weapon like a gun, knife, or club.

Avoiding Road Rage Confrontations

- ▶ If you're being hassled by another driver, try not to react
- ▶ If you are being followed, drive on to the nearest police station or busy place to get assistance
- ▶ In town, lock the car doors and keep the windows and sunroof only partly open
- ▶ When stopped in traffic, leave enough space to pull out from behind the car you are following

Avoiding Road Rage Confrontations

- ▶ If someone tries to get into your car, attract attention by sounding your horn or a personal alarm
- ▶ Do not be tempted to start a fight and do not be tempted to carry any sort of weapon. It may only provoke a potential assailant and could end up in his or her hands

Encounter With Aggressive Driver

- ▶ Remain calm
- ▶ Keep your distance
- ▶ Do not pass unless you have to
- ▶ Change lanes once it is safe (don't jump lanes without looking)
- ▶ If you cannot change lanes and an aggressive driver is behind you, stay where you are, maintain the proper speed and do not respond with hostile gestures.
- ▶ You may call **911** (or ***911** from a cell phone) to report an aggressive driver or a driver you believe may be impaired.

Aggressive Driving Test

Yes No

Aggressive Driving Test

Yes No

Aggressive Driving Test

Yes No

Aggressive Driving Test

Yes No

Aggressive Driving Test

Yes No

Driving Test Score

► Score yourself:

► Number of "No" Answers

- 1-3 Excellent
- 4-7 Good
- 8-11 Fair
- 12 (or more) Poor

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Learning Exercise

1. Which of the following are some of the main risk groups for fatigued driving ?
 - a. Male drivers aged 16-29
 - b. Female drivers above 40
 - c. Shift workers and students
 - d. a & c
2. A lack of visual or physical stimulation can contribute to drowsiness while driving.
 - a. True
 - b. False

Learning Exercise

3. Risk factors for fatigued driving include all of the following except:
 - a. Consumption of alcohol
 - b. Driving a substantial number of hours each day
 - c. Driving in the mid-morning hours
 - d. Driving in the mid afternoon hours
4. Sleep related accidents are highest in the early hours of the morning and in the mid afternoon.
 - a. True
 - b. False

Learning Exercise

5. The only tactics used by drivers to avoid falling asleep that had any affect beyond 10-15 minutes were intake of caffeine of at least 150mg and a nap of around 15 minutes.
 - a. True
 - b. False
6. Driver education on fatigue should include:
 - a. Types of journeys that carry the highest risk
 - b. Ineffectiveness of common tactics
 - c. Importance of planning journeys
 - d. All of the above

Learning Exercise

7. Aggressive driving behavior includes which of the following:
 - a. Passing on the left
 - b. Passing a stopped school bus
 - c. None of the above
8. Traffic delays, running late and anonymity and disregard for others are all factors involved in aggressive driving.
 - a. False
 - b. True

Learning Exercise

9. Aggressive driver characteristics include:
 - a. High frustration levels
 - b. Do not see themselves as a problem
 - c. Both a & b
 - d. Less likely to drink and drive
10. Aggressive drivers think they are in control when they are not.
 - a. True
 - b. False

Learning Exercise

11. "Road Rage" incidents make up the highest percentage of all aggressive driving incidents.
 - a. True
 - b. False
12. Some proper responses to an aggressive driver include:
 - a. Do not pass unless you have to

- b. Keep your distance
- c. Respond with hostile gestures
- d. a & b

Answer Key

- 1. d
- 2. a
- 3. c
- 4. a
- 5. a
- 6. d
- 7. b
- 8. b
- 9. c
- 10. a
- 11. b
- 12. d

Defensive Driving Module 4

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Course Outline

- ▶ Defensive driving points
- ▶ Avoiding rear-end collisions
- ▶ Backing safety
- ▶ Avoiding deer crashes
- ▶ Inclement weather driving
- ▶ Railroad crossings
- ▶ Safety belt use

Course Objectives

- ▶ Be able to identify defensive driving points and their rationale
- ▶ Be able to recognize techniques for avoiding rear-end collisions

- ▶ Be able to identify tips for backing up safely
- ▶ Be able to identify techniques for avoiding vehicle-deer crashes

Course Objectives

- ▶ Be able to recognize steps to be taken for proper driving in inclement weather
- ▶ Be able to identify safe techniques in approaching and crossing railroad tracks
- ▶ Be able to recognize the effects of seat belt use in preventing fatal injuries
- ▶ Be able to identify the proper way of wearing seat belts to prevent injuries

Defensive Driving Points

- ▶ **Leave one car length when stopped in traffic. Be able to see where the tires meet the pavement**
- ▶ If vehicle in front stalls, you will be able to maneuver around vehicle
- ▶ If either vehicle rolls, no collision
- ▶ If road is slippery, you have a cushion to stop
- ▶ If you are struck from behind, you won't strike the vehicle in front

Defensive Driving Points

- ▶ **Look both directions twice when approaching an intersection**
- ▶ Traffic in left lane poses greater chance of hitting you
- ▶ Double check both directions to see around mirrors, obstacles, etc.
- ▶ Look for cars making turns, running red lights and stop signs

Defensive Driving Points

- ▶ **Count 1-2-3 before entering an intersection when the light first changes to green**

- ▶ If someone runs the light, you won't get hit

Defensive Driving Points

- ▶ **Four to six second following distance**
- ▶ No matter what the car ahead of you does, you stand a better chance of avoiding a collision
- ▶ Provides you with a cushion for **YOUR** mistakes!

Defensive Driving Points

- ▶ **Check you mirrors every 5-8 seconds**

- ▶ Keeps you informed of traffic around you
- ▶ You may need that time to react to an emergency

Defensive Driving Points

- ▶ **Scan parked cars**

- ▶ They give you hints of movement into traffic
- ▶ They shield kids, animals and other pedestrians

Defensive Driving Points

- ▶ **Stale green lights. (Lights that have been green for a few seconds)**

- ▶ Take your foot off the accelerator and cover the brake, preparing to stop

Defensive Driving Points

- ▶ **Look ahead 8-12 seconds**

- ▶ Get the "BIG" picture

- ▶ Plan ahead (What if..?)

Defensive Driving Points

- ▶ **Know what is around you and maintain a “safety” cushion of space**

- ▶ If you don’t get too close to it, you can’t hit it

Defensive Driving Points

- ▶ **Communicate with traffic**

- ▶ Use your turn signals, brake lights, head lights, etc.
- ▶ Make sure they see you
- ▶ Make eye contact with the other driver, when possible

Defensive Driving Points

- ▶ **Look first before moving in any direction,....and then keep looking**

- ▶ Your head should be on a “swivel” constantly checking mirrors, in front, behind, and both sides of your vehicle
- ▶ Especially keep looking in the direction of travel

Defensive Driving Points

- ▶ **Never back-up unnecessarily**

- ▶ Only back-up as a last resort
- ▶ Go around if necessary

- ▶ **G.O.A.L—Get Out And Look**

- ▶ Look around the entire path you are going to take, not just behind your vehicle. What is behind, above and beside your vehicle that pose a risk?

Defensive Driving Points

- ▶ **Keep speed appropriate for conditions**

- ▶ Slow down in traffic, inclement weather, darkness, roadway conditions,

construction areas and areas with wildlife

Defensive Driving Points

- ▶ **Keep your vehicle in good condition**
- ▶ Inspect your vehicle and your safety equipment
- ▶ Make sure your lights and windows are clean
- ▶ Take care of your vehicle and your vehicle will take care of you

Rear-End Collisions

- ▶ The majority of rear end accidents happen when:
 - The driver of the other vehicle is distracted or inattentive
 - The driver of the other vehicle is under the influence of controlled substances or alcohol
 - The driver of the other vehicle is fatigued
 - The driver of the other vehicle is inexperienced

Rear-End Collisions

- ▶ The majority of rear end accidents happen when:
 - There is inclement weather; i.e. rain, snow, ice and fog
 - There is a mechanical defect in one of the involved vehicles
 - Speed is definitely a factor
 - Last but not least, the driver of the other vehicle has a medical issue

Avoiding Rear-End Collisions

- ▶ Allowing a larger spacing in wet conditions
- ▶ Not overestimating the movement of the vehicle directly ahead of you, as well as recognizing the traffic flow ahead
- ▶ Allowing a larger spacing when following large vehicles that block your view of the road ahead

Avoiding Rear-End Collisions

- ▶ Recognizing your vehicle's braking ability and allowing a larger

spacing when your vehicle is heavily loaded

- ▶ Adjusting your speed when entering into an intersection operated by traffic control signals

Avoiding Rear-End Collisions

- ▶ Allowing a larger spacing when following smaller, lighter vehicles, such as motorcycles, that can stop more quickly than you
- ▶ Planning your trip to allow for adequate travel time
- ▶ Allowing an aggressive driver to pass you rather than have him tailgate

Avoiding Rear-End Collisions

- ▶ Make sure brake lights and turn signals are working, and use them correctly
- ▶ In emergency stopping situations flash your brake lights to warn drivers behind you
- ▶ Frequently glance in your rear view mirror, including when stopped at an intersection
- ▶ Stop a car length short of intersections or crosswalks and keep your wheel straight to allow room to roll ahead if struck from behind. This could give you room for evasive action if required.

Backing Safety

- ▶ Visually clear the area behind the vehicle first
- ▶ Turn and look to the rear while you back (use side view mirrors if sight is obstructed)
- ▶ Park so you can pull forward when leaving
- ▶ Back into your parking space to begin with instead of backing out when you leave

Deer Vehicle Crashes

- ▶ 1.5 million car accidents with deer each year in the U.S.
- ▶ Result in \$1 billion in vehicle damage
- ▶ About 150 human fatalities
- ▶ Over 10,000 personal injuries

Top Ten States for Deer Crashes

- ▶ 1) Pennsylvania
- 2) Michigan
- 3) Illinois
- 4) Ohio
- 5) Georgia
- 6) Minnesota
- 7) Virginia
- 8) Indiana
- 9) Texas
- 10) Wisconsin

Deer Crash Photos

Avoiding Deer Crashes

- ▶ Most deer crash deaths and serious injuries occur when motorists veer to avoid hitting deer
- ▶ Improve your vision
 - Slow down in marked deer caution zones
 - Drive within the range of your headlights
 - Use of high-beam headlights when driving in deer territory will increase your vision and increase your time to react

Avoiding Deer Crashes

- ▶ Watch for Deer
 - Dusk to dawn
 - Spring and Fall
 - Near waterways
 - Near wooded areas

Avoiding Deer Crashes

- ▶ Remember.....
 - Deer are unpredictable
 - Deer travel in groups, so watch for more than one
- ▶ Don't Veer
 - Off the roadway
 - Out of control
 - Into oncoming traffic

Inclement Weather Driving

- ▶ Plan ahead; know the current road conditions
- ▶ Make sure vehicle equipment is in good working order; brakes, tires, windshield wipers
- ▶ Clean headlights and have plenty of windshield washer fluid
- ▶ Buckle up and Slow down!
- ▶ Double the distance between you and the vehicle in front of you

Inclement Weather Driving

- ▶ Watch for icy surfaces on bridge decks
- ▶ Don't get overconfident with four-wheel drive
- ▶ Drive with your headlights on
- ▶ Look farther ahead in traffic
- ▶ Leave room for maintenance vehicles and plows

Inclement Weather Driving

- ▶ Use your low beams in fog
- ▶ Remember that driving in poor conditions is fatiguing
- ▶ Pull over if you need to
- ▶ If you get stuck, generally, the best thing is stay in your vehicle and keep warm while you wait for help
- ▶ Beware of carbon monoxide emissions

Rail Road Crossings

Rail Road Crossings

- ▶ In 2003, incidents at public highway rail crossings resulted in
 - 295 deaths
 - 893 injuries
 - 502 were killed and 394 injured while trespassing on rail road rights-of-way and property

Rail Road Crossings

- ▶ The human eye is designed to pick up:

- ▶ Color
- ▶ Motion
- ▶ Light

Rail Road Crossings

- ▶ The sound, lights and movement effect is put into action specifically at rail road crossings.
- ▶ The flashing of the lights, lowering of the arms and clanging of the bells alerts us to the movement or approaching of the train

Rail Road Crossings

- ▶ The U.S. has 150,000 public grade crossings
 - 35,000 have gates
 - 25,000 have flashing lights
 - 1,200 have highway traffic signals, wigwags and bells

Rail Road Crossings

- ▶ Approach with care
- ▶ Prepare to stop; turn off fans and radio and roll down windows
- ▶ Stop, Look and Listen both ways
- ▶ Look again before you move
- ▶ Cross tracks with care
- ▶ Keep going once you start, even if lights start to flash or gates

come down

Rail Road Crossings

- ▶ If your vehicle stalls or hangs up on the tracks:
 - Get out immediately
 - Move away (walk toward the oncoming train and away from the tracks at a 45 degree angle)
 - Locate the emergency phone number
 - Call for help (use 911 if you can't find the railroad emergency phone number at the site)

Seat Belt Use

- ▶ In June 2005, safety belt use in the U.S. reached 82% -highest level recorded
- ▶ Use of belts:
 - 88% Expressways
 - 81% Surface streets
- ▶ Vehicle Types:
 - 85% Vans and SUV's
 - 83% Cars
 - 73% Pickup trucks

Safety Belt Use 2005

- ▶ NHTSA estimates that 15,632 lives were saved in 2005 by the use of safety belts
- ▶ 35% of passenger car occupants and 37% of light truck occupants involved in fatal crashes were unrestrained
- ▶ In fatal crashes, 75% of passenger vehicle occupants who were totally ejected from vehicles were killed

Use of Seat Belts

- ▶ Using seat belts cuts the risk of death by 45% for people riding in cars and as 60% for those traveling in trucks and SUV's
- ▶ Seat belts save 14,000 lives each year and every state in the nation has a law mandating seat belt use
- ▶ 20% of Americans still fail to buckle up

Safety Belt Use

Among Crash Fatalities

1997 - 2002

Potential Benefits of Belt Use

- ▶ Safety belts can save 1 of every 2 unbelted fatalities, so...
- ▶ Of the 1,300 work related fatalities each year, about 2/3 are unrestrained (860)
- ▶ One half of these, or about 430 employees, could be saved each year.

Effectiveness of Safety Belts

- ▶ Safety belts, especially lap/shoulder belts, spread the stress and impact forces of a crash along the stronger and broader areas of the body, such as the hips and shoulders, thereby limiting injuries
- ▶ Safety belts, especially lap/shoulder belts, hold you in place while the vehicle absorbs the impact of the crash and decelerates

Effectiveness of Safety Belts

- ▶ The safety belt protects your head and spinal cord
- ▶ Safety belts prevent occupants from being ejected from the vehicle or thrown around inside the vehicle, where they can strike objects within the vehicle

Effectiveness of Safety Belts

- ▶ In a crash, a safety belt keeps the driver in place behind the steering wheel and in control of the vehicle, thereby avoiding or reducing the consequences of an accident
- ▶ Safety belts can keep you from being knocked unconscious,

improving your chances of escape

Don'ts of Seat Belt Fit

- ▶ Do not allow the buckle to be located in the stomach or abdomen area.
- ▶ Do not wear the shoulder strap under your arm or behind your back.
- ▶ Do not wear the shoulder belt too snug, or let it rub against your neck.
- ▶ Do not allow the belts to become too loose as you travel

Do's of Proper Seat Belt Fit

- ▶ Do wear the lap belt low on the hips, two to four inches below the waist, and against the thighs
- ▶ Do wear the shoulder strap across the center of the chest and the center of the shoulder

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Learning Exercise

1. When approaching an intersection, traffic in left lane poses the greatest chance of hitting you.
 - a. True
 - b. False
2. Try to keep at least a _____ seconds following distance between you and the car in front.
 - a. 1-2
 - b. 2-3

c. 4-6

Learning Exercise

3. One of the purposes of scanning parked cars is to give you hints of movement into traffic.
 - a. True
 - b. False
4. To assist you in avoiding rear-end collisions, Allow a smaller spacing when following smaller, lighter vehicles, such as motorcycles.
 - a. True
 - b. False

Learning Exercise

5. Which of the following are proper techniques that should be employed when backing?
 - a. Visually clear the area behind the vehicle
 - b. Park so you can pull forward when leaving
 - c. Back into your parking space to begin with instead of backing out when you leave
 - d. all of the above
6. Deer-vehicle crashes result in less than 10,000 personal injuries in the U.S. on an annual basis.
 - a. True
 - b. False

Learning Exercise

7. Deer-vehicle crashes can be avoided by employing the following techniques:
 - a. Veering off the roadway
 - b. Especially watch for deer from dusk to dawn
 - c. Use high-beam headlights when driving in deer territory
 - d. Both b and c
8. Double the distance between you and the vehicle in front of you when driving in inclement weather.
 - a. False
 - b. True

Learning Exercise

9. Driving in inclement weather is fatiguing.
 - a. True

b. False

10. Once you start crossing a railroad track, stop and get out if lights start to flash or gates come down.

a. true

b. False

Learning Exercise

11. In fatal crashes, 25% of passenger vehicle occupants who were totally ejected from vehicles were killed.

a. True

b. False

12. The lap belt should be worn low on the hips, two to four inches below the waist, and against the thighs.

a. True

b. False

Answer Key

1. a
2. c
3. a
4. b
5. d
6. b
7. d
8. b
9. a
10. b
11. b
12. a

Safe Driving Program Module 5

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Course Outline

- ▶ Statistics and employer costs
- ▶ Safe driving program benefits
- ▶ Safe driving program elements
 - Senior management commitment & employee involvement
 - Written policies and procedures
 - Driver agreements
 - Motor vehicle record checks
 - Crash reporting & investigation

Course Outline

- ▶ Safe driving program elements cont'd:
 - Vehicle selection, maintenance & inspection
 - Disciplinary action system
 - Reward/incentive program
 - Driver training/communication
 - Regulatory compliance
- ▶ ANZI/ASSE Z15.1 – Safe Practices for Motor Vehicle Operations
 - Management, Leadership and Administration
 - Operational Environment
 - Driver Considerations
 - Vehicle Considerations
 - Incident Reporting and Analysis

Course Objectives

- ▶ Be able to recognize the annual cost to employers of motor vehicle crashes
- ▶ Be able to identify the benefits of a safe driving program
- ▶ Be able to identify the elements of a safe driving program
- ▶ Be able to identify the components and requirements of the ANZI/ASSE Standard - Safe Practices for Motor Vehicle Operations

Statistics

- ▶ Every 12 minutes, someone dies in a motor vehicle crash
- ▶ Every 10 seconds an injury occurs
- ▶ Every 5 seconds a crash occurs
- ▶ Many of these incidents occur during the workday or during the commute to and from work

Employer Burden

- ▶ Employers bear the cost for injuries that occur both on and off the job
- ▶ Implementing a driver safety program in the workplace can greatly reduce the risks faced by your employees and their families while protecting your company's bottom line

Cost of Vehicle Crashes

- ▶ Cost employers \$60 billion annually in medical care, legal expenses, property damage and lost productivity
- ▶ Average crash cost an employer \$16,500
- ▶ Average crash with an injury costs \$74,000
- ▶ Costs can exceed \$500,000 if a fatality is involved

Safe Driving Program Benefits

- ▶ Helps save lives and reduces the risks of life-altering injuries within your workforce
- ▶ Protects your organizations human and financial resources
- ▶ Guards against potential company and personal liabilities associated with crashes involving employees driving on company business

Driver Safety Program Benefits

- ▶ 61% of surveyed business executives believe their companies receive a return of investment of \$3 or more for every \$1 they spent on improving workplace safety

Safe Driving Program Elements

- ▶ Senior management commitment & employee involvement
- ▶ Written policies and procedures
- ▶ Driver agreements
- ▶ Motor vehicle record checks
- ▶ Crash reporting & investigation

Safe Driving Program Elements

- ▶ Vehicle selection, maintenance & inspection
- ▶ Disciplinary action system
- ▶ Reward/incentive program
- ▶ Driver training/communication
- ▶ Regulatory compliance

Commitment & Involvement

- ▶ Senior management needs to provide leadership, allocate resources and promote safety among all employees
- ▶ Employees and their representatives should participate in the process to ensure involvement and buy in of the company's safety culture

Policies & Procedures

- ▶ Traffic safety policies
- ▶ Drug and alcohol policy
- ▶ Seat belt use policy

Driver Agreements

- ▶ Contract with employees who drive for work purposes
 - Acknowledges awareness of the company's traffic safety policies
 - Expectations regarding driver performance
 - Reporting of moving violations
 - Vehicle maintenance

Motor Vehicle Record Checks

- ▶ Screen out drivers with poor driving records
- ▶ Review periodically to ensure good driving record
- ▶ Establish number of violations necessary to lose company driving privileges

Crash Reporting and Investigation

- ▶ Procedure for reporting all crashes as soon as feasible after the incident
- ▶ Investigate causes
- ▶ Implement corrective actions

Vehicle Selection, Maintenance & Inspection

- ▶ Review & consider safety features for company vehicles (best crash test ratings)
- ▶ Preventative maintenance schedule
- ▶ Routine maintenance schedule

Disciplinary Action System

- ▶ Policy for moving violations or preventable accidents
- ▶ Progressive discipline
- ▶ Specific actions for accumulation of violations or preventable crashes within a certain time period

Reward/Incentive Program

- ▶ Incorporate driving performance into the overall job performance evaluation
- ▶ Should include recognition, rewards, special privileges or other incentives to motivate employees
- ▶ Foster a safe driving culture

Driver Training/Communication

- ▶ Initial training for new drivers
- ▶ Refresher training for experienced drivers
- ▶ Publish reminders of safe driving practices and skills

Safe Driving Practices

- ▶ Use a seat belt at all times
- ▶ Be well rested before driving
- ▶ Avoid taking medications that make you drowsy
- ▶ If you are impaired by alcohol or any drug, do not drive
- ▶ Set realistic goal for number of miles to be driven safely each day
- ▶ Avoid distractions

Safe Driving Practices

- ▶ Avoid aggressive driving – keep your cool in traffic
- ▶ Be patient and courteous to other drivers
- ▶ Do not take other drivers' actions personally
- ▶ Reduce stress by planning your route, allow for plenty of travel time and avoid crowded roadways and busy driving times if possible
- ▶ Be alert to situations requiring quick action
- ▶ Stop approximately every two hours for a break

Regulatory Compliance

- ▶ Ensure compliance with all applicable transportation regulations
 - Federal Motor Carrier Safety Administration
 - U.S. Department of Transportation
 - National Highway Transportation Safety Administration
 - Federal Highway Administration
 - Employment Standards Administration

Workplace Considerations

- ▶ Parking lot should be well lighted and maintained
- ▶ Clear snow and ice
- ▶ Install signs to remind employees to “buckle up” as they leave the parking lot
- ▶ Install speed limit signs if warranted

Standard Safe Practices for Motor Vehicle Operations

- ▶ ANSI/ASSE Z15.1
- ▶ Effective on April 28, 2006
- ▶ Voluntary standard that sets forth safety requirements for the

operation of motor vehicle fleets

- ▶ Purpose is to establish safety requirements that mitigate injury and property losses

Standard Safe Practices for Motor Vehicle Operations

- ▶ Establishes best practices and provides guidelines for development of fleet safety programs for all classes of employers – whether addressing a single vehicle or fleet, and whether the equipment is employer-owned, employee-owned or leased from a third party

Components of Z15.1

- ▶ Management, Leadership and Administration
- ▶ Operational Environment
- ▶ Driver Considerations
- ▶ Vehicle Considerations
- ▶ Incident Reporting and Analysis

MANAGEMENT, LEADERSHIP & ADMINISTRATION

- ▶ Senior leadership should allocate sufficient staff and financial resources required to manage and support the overall motor vehicle safety program
- ▶ All levels of management should be involved in and held accountable for the program's development, management, and implementation

Written Program

- ▶ Written program should define the organizational requirements for driver and motor vehicle safety
- ▶ Should include any industry specific requirements

Written Program Elements

- ▶ Safety Policy
- ▶ Responsibilities & accountabilities
- ▶ Driver recruitment, selection, & assessment
- ▶ Organizational safety rules
- ▶ Orientation & training
- ▶ Reporting rates and major incidents to executives

Written Program Elements

- ▶ Communications
- ▶ Vehicle specifications
- ▶ Inspections & maintenance
- ▶ Reward & recognition
- ▶ Regulatory compliance management
- ▶ Management program audits

Safety Policy

- ▶ States management's concern for the health & well being of drivers
- ▶ Expectation that drivers comply with all aspects of the vehicle safety program and all applicable local, state and federal laws pertaining to motor vehicle operations
- ▶ Safety as a condition for continued driving privileges

Responsibilities & Accountabilities

- ▶ A system of responsibility and accountability should be established throughout the organization in order to ensure effective implementation of the vehicle safety program

- ▶ Process should encourage driver involvement

Driver Recruitment, Selection & Assessment

- ▶ Implement a system that recruits and selects drivers to ensure safe operation and management of the motor vehicle safety program

- ▶ Should be designed to select drivers who are committed to safe vehicle operation

Organizational Safety Rules

- ▶ Develop and implement safety rules that address the specific issues of the organization
- ▶ Drivers found to be in violation of these rules should be counseled or disciplined in a fair and uniform manner consistent with the established policies

Orientation & Training

- ▶ A process of orientation & training should be established to ensure safe and effective motor vehicle operation
- ▶ Train drivers on vehicle similar in size, power and configuration as the vehicle they will be using
- ▶ Training should include behind-the-wheel observation

Reporting Rates, Incidents

- ▶ Require the investigation and analysis of incidents in order to report major incidents, trends and safety performance to all management levels of the organization
- ▶ All major incidents must be reported to senior management immediately
- ▶ Organizations should determine what constitutes a major incident

Communications

- ▶ Implement communication system that ensures all internal and external communications are clear and accurate
- ▶ External communications should be coordinated by authorized personnel to manage inquiries from media, public, and regulatory agencies

Vehicle Specifications

- ▶ Establish a system to ensure the proper vehicle is selected for the intended safe use
- ▶ Safety considerations include:
 - Suitability for designed purpose
 - Crashworthiness
 - Cargo capacity and load position
 - Towing capacity
 - Ergonomic considerations
 - Safety features

Inspections & Maintenance

- ▶ Establish a system for vehicle/equipment inspections and maintenance
- ▶ Vehicles should be inspected at a minimum in accordance with the vehicle manufacturer's recommendations, regulatory requirements, and recognized standard practices

Inspections & Maintenance

- ▶ Institute formal maintenance procedures and recordkeeping procedures that meet or exceed the vehicle manufacturer's recommendations, giving consideration to the operating environment

- ▶ Vehicles should also be inspected promptly after a notice of manufacturer recall

Inspections & Maintenance

- ▶ All vehicles must be maintained by qualified automotive service technicians at regular intervals
- ▶ Safety related defects shall be repaired before the vehicle is placed back in service
- ▶ Organizations performing their own

vehicle maintenance must have the appropriate facilities and equipment to perform the required tasks

Regulatory Compliance Management

- ▶ Should have system in place to monitor federal, state and local regulations to ensure compliance and implement any policy/procedural change in a timely manner

Management Program Audits

- ▶ Establish an auditing process that monitors compliance with regulations and the organization's motor vehicle safety program
- ▶ The effectiveness of each program element should be audited

OPERATIONAL ENVIRONMENT

- ▶ Establish a policy addressing the use of occupant restraints including the use of safety belts
- ▶ Occupant restraints include:
 - Safety belts
 - Infant seats
 - Child safety seats
 - Booster seats
 - Supplemental restraint systems (airbags)

Impaired Driving

- ▶ Establish a policy regarding the use of drugs and alcohol as well as any other condition that may adversely affect the ability to safely operate a motor vehicle
- ▶ Policy should define what constitutes a violation of this policy and the specific consequences

Distracted Driving

- ▶ Organizations should have a policy regarding potential distractions while driving
- ▶ Address the following potential distractions:
 - Cell phone use
 - Eating or drinking
 - Grooming
 - Passengers, children, pets
 - Smoking
 - Reading
 - Use of technology

Aggressive Driving

- ▶ Establish a policy regarding aggressive driving
- ▶ Aggressive driving includes:
 - Speeding
 - Tailgating
 - Failure to signal lane changes
 - Running red lights and stop signs
 - Weaving in traffic
 - Excessive use of the horn

Operational Policies

- ▶ Business Use Policy: Delineates specific requirements for use of organization vehicles
- ▶ Personal Use Policy: If an organization allows for personal use of company vehicles, the requirements need to be specifically spelled out – needed to manage increased liability

Operational Policies

- ▶ Driver Owned/Leased Vehicles used for Business Purposes:
 - Reimbursement on a per mile basis or arranged vehicle allowance
 - Determine thresholds for incidental use of personal vehicles _
- ▶ Rental Car Policy: Policy needs to address where a driver rents a vehicle for while on organizational business__

Routing & Scheduling

- ▶ Should assess the use of vehicles and the nature of the territory traveled

and make determinations regarding the need to formally manage routing and scheduling

► Evaluate the safety of routes and timing of trips:

- Road construction, traffic conditions
- Road surface, weather
- Speed limits
- multiple stops in close proximity

DRIVER CONSIDERATIONS

► Driver Qualifications:

- Establish job description for each type of position that requires driving
- Consideration should be given to educational and physical requirements
- Evaluate the physical condition of drivers to be sure they are capable of performing the driving tasks in the job description

Background Checks

► Perform applicant background checks including state motor vehicle record (MVR) checks, and reference checks with previous employers

► Consider:

- Previous experience or training
- Number and severity of moving violations
- Prior license suspension
- Previous crashes or incidents
- Criminal record
- History of DUI/DWI

Driver Management

► A driver management program should be established to assure that the driver is following organizational procedures

► Periodically evaluate the driver's performance via:

- Direct observation
- MVR review
- Trip recorder info
- Feedback from general public

Driver Training Program

► Training program should address requirements for new drivers, continuing education of existing drivers, and instances where

remedial training shall be required

- ▶ The training program should include both classroom and behind-the-wheel training

Driver Training Program

- ▶ Topics should include:
 - Defensive driving
 - Substance abuse
 - Distracted driving
 - Aggressive driving
 - Vehicle inspection
 - Commodity specific training
 - Safety regulations
 - Security procedures
 - Emergency equipment
 - Post-incident procedures
 - Vehicle inspection/maintenance

Recordkeeping

- ▶ Must maintain documentation of the qualifications and driving record of drivers
- ▶ Records should be kept in the driver qualification/personnel file, which includes:
 - Completed application form
 - Copy of Driver's MVR
 - Information of reference checks
 - Training records
 - Copy of current driver's license

VEHICLE CONSIDERATIONS

- ▶ Develop policies that require review of all vehicle modifications before they are accomplished
- ▶ The review should ensure that the proposed modification does not create an unsafe condition or impair/circumvent any safety device

Modifications

► Modifications include:

- Stereo equipment
- Trailer hitches
- Window tinting
- Navigation systems
- Security systems
- Accessibility aids
- Cargo containment means
- Material handling means
- Mobile telephone attachments
- Changing tire or rim size
- Changing body configuration
- Increasing carrying/hauling capacity

Emergency Equipment

- Vehicles must be equipped with appropriate emergency equipment in the event the driver experiences mechanical difficulty, loss or shifting of load, or a crash
- Vehicles must be equipped with emergency warning devices around the disabled vehicle

Emergency Equipment

► Emergency equipment should include:

- First aid kit
- Flashlight
- Reflective safety vest
- Space blanket
- Light sticks
- Fire extinguisher
- Tire inflator/sealant
- Reflective triangles/flares
- Cold weather emergency items

Periodic Vehicle Checks

- Visual checks should be made by drivers each time a vehicle is to be operated
- Periodic checks include:
 - Gauges

- Fluid and fuel
- Wheels and tires
- Mirrors
- Wipers
- Lights

Vehicle Replacement

- ▶ Organizational-operated vehicles shall be replaced periodically based upon factors such as:
 - Total mileage
 - Maintenance cost & frequency
 - Condition of vehicle
 - Operational requirements
 - Operating environment
 - Hours of service
 - Safety of vehicle

INCIDENT REPORTING & ANALYSIS

- ▶ Organizations need to develop incident and collision reporting procedures to collect information to support analysis and review of both minor and major motor vehicle incidents for the purpose of taking corrective action
- ▶ Instructions for reporting an incident should be placed in every vehicle

Reporting

- ▶ Reporting procedures need to identify the person or office that the driver needs to contact in case of an incident
- ▶ The driver needs to report all motor vehicle incidents regardless of severity
- ▶ The incident report should be completed as soon as possible but no longer than 24 hours after the incident

Analysis

- ▶ Develop process to systematically review and analyze incidents
- ▶ Identify the root cause and other causal and contributing factors
- ▶ Identify specific problems and prioritize according to their impact

on the incident

- ▶ Identify and implement corrective actions to prevent reoccurrence

Corrective Actions

- ▶ Drivers involved in preventable accidents should undergo a review of their driving skills with subsequent skills training if necessary
- ▶ Corrective actions for other factors must be implemented to address factors related to the driver, the vehicle or the operating environment

Data Analysis

- ▶ Collect data needed to calculate rates for tracking safety performance over time
- ▶ Examples of data sources:
 - Loss history
 - Benchmarking
 - Data from accident management services
 - Tracking devices and event data recorders

Data Analysis

- ▶ Motor vehicle incident rates should be used to measure the historical frequency of incidents or collisions
- ▶ Rates should be identified by type tracked and operational characteristic
- ▶ Continuously maintain rates in order to compare with historical or industry experience and to track progress over time

References

1. American National Standard Institute, (ANSI), Safe Practices for Motor Vehicle Operations, ANSI/ASSE Z15.1, 2006
2. Daecher, Carmen W. The Z15.1 Standard: Your Guide to More Effective Fleet Management
3. Liberty Mutual Insurance Company; "Liberty Mutual Executive Survey of Workplace Safety", 2001
4. Network of Employers for Traffic Safety, (NETS) Traffic Safety Primer: A Guidebook for Employers

5. U.S. Department of Labor, OSHA; "Guidelines for Employers to Reduce Motor Vehicle Crashes"
6. U.S. Department of Labor, OSHA; "Safe Driving Practices for Employees"

Learning Exercise

1. Motor vehicle crashes cost employers _____ annually.
 - a. 45 billion
 - b. 60 million
 - c. 60 billion
 - d. 90 million
2. One benefit of a safe driving program is that it can guard against potential company and personal liabilities associated with work-related crashes.
 - a. True
 - b. False

Learning Exercise

3. Elements of a safe driving program include which of the following:
 - a. Driver agreements
 - b. Disciplinary action system
 - c. Reward/incentive program
 - d. All of the above
4. Driver agreements should contain expectations regarding driver performance.
 - a. True
 - b. False

Learning Exercise

5. Motor vehicle record checks should not be used to screen out drivers with poor driving records.
 - a. True
 - b. False
6. A reward/incentive program should:
 - a. Incorporate driving performance into the overall job performance evaluation
 - b. Foster a safe driving culture
 - c. Both a & b

Learning Exercise

7. The ANSI/ASSE Standard - Safe Practices for Motor Vehicle Operations is a new mandatory standard.
 - a. True
 - b. False
8. Incident reporting, the operational environment and driver considerations are all part of the Z15.1 standard.
 - a. True
 - b. False

Learning Exercise

9. The management, leadership and administration component contains which of the following elements:
 - a. Written program, safety policy, responsibilities
 - b. Operational policies, routing & scheduling
 - c. Driver recruitment, organizational safety rules
 - d. Both a & c
10. Policies on the use of safety belts are found in the driver consideration component of this standard.
 - a. True
 - b. False

Learning Exercise

11. A driver's performance should be periodically evaluated via motor vehicle record (MVR) review and direct observation.
 - a. True
 - b. False
12. Policies should be developed that require review of all vehicle modifications after they are accomplished.
 - a. True
 - b. False

Learning Exercise

13. Visual checks should be made by drivers each time a vehicle is to be operated.
 - a. True
 - b. False
14. Organizations need to develop incident and collision reporting procedures for major motor vehicle incidents only.
 - a. True

- b. False

Learning Exercise

15. An incident report should be completed as soon as possible but no longer than 24 hours after the incident.
 - a. True
 - b. False
16. A driver needs to report all motor vehicle incidents regardless of severity.
 - a. True
 - b. False

Answer Key

1. c
2. a
3. d
4. a
5. b
6. c
7. b
8. a
9. d
10. b
11. a
12. b
13. a
14. b
15. a
16. a

Commercial Driver Safety Module 6

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Course Outline

- Commercial Motor Vehicle Guidelines
- Drivers
 - Driver qualifications
 - Drug & Alcohol testing
- Vehicles
 - Inspections

- Cargo securement
- Hours of service regulations
- Security awareness
- Hazardous material
- Emergency response
- Materials of trade

Course Objectives

- ▶ Be able to identify the criteria for determining a commercial motor vehicle
- ▶ Be able to recognize the qualifications for a commercial drivers license
- ▶ Be able to identify the components of a pre-trip or post-trip inspection
- ▶ Be able to identify securement rules to prevent rolling or shifting of materials

Course Objectives

- ▶ Be able to define the different hours of service rules and the requirements for local drivers
- ▶ Be able to recognize security awareness issues at the shipper, en route and at the final destination
- ▶ Be able to recognize when placards are required for transporting hazardous materials

Course Objectives

- ▶ Be able to identify the sections and related content of the Emergency Response Guidebook
- ▶ Be able to define materials of trade and their transport limitations

Commercial Motor Vehicle

- ▶ Do you have a vehicle with a GVWR of over 10,001 pounds?
- ▶ Do you have a single unit vehicle with a GVWR of over 26,001 pounds?
- ▶ Do you have a vehicle with a combination GVWR of over 26,001

pounds or greater?

- ▶ Do you have a three axle (two drive or tandems) with a GVWR of 26,001 pounds or greater?

Commercial Motor Vehicle

- ▶ Do you have a vehicle with a GVWR of over 57,000 pounds?
- ▶ Do you have a vehicle originally designed to carry 16 or more passengers including the driver?
- ▶ Do you have a vehicle which transports placardable amounts of hazardous materials?
- ▶ Do you have a vehicle which requires a driver to have a CDL to operate it?

Commercial Motor Vehicle

- ▶ If you answered yes to any of the questions on the previous two slides, then you have a commercial motor vehicle and are required to follow the Federal Motor Carrier Safety Regulations

Drivers

- ▶ Drivers must be qualified to operate the vehicle:
 - Application
 - Background investigation of prior work history
 - Driving record check
 - Completed medical form and physical (renewed every 2 years)
 - Annual certificate of violations

Drug & Alcohol Testing

- ▶ Applies to operators of vehicles that require a Commercial Drivers License (CDL)
- ▶ Drug & alcohol testing includes:
 - Pre-employment (drugs)
 - Post accident
 - Reasonable suspicion
 - Random
 - Return to work

Vehicles

- ▶ Vehicle Maintenance file:
 - Make, model serial number or VIN
 - Company ID, license plate number, tire size
 - All maintenance performed on the vehicle
- ▶ Daily vehicle inspection report:
 - Visual pre trip inspection
 - Written post trip inspection

Pre-Trip Inspections

- ▶ No commercial motor vehicle shall be driven unless the driver is satisfied that the following parts and accessories are in good working order:
 - Service brakes, including trailer brake connections
 - Parking (hand) brake
 - Steering mechanism
 - Lighting devices and reflectors
 - Tires, wheels and rims
 - Horn
 - Windshield wiper or wipers
 - Rear-vision mirror or mirrors
 - Coupling devices
 - Emergency equipment

Post-Trip Inspection

- ▶ Post trip inspections must be documented
- ▶ Each driver must prepare a driver's vehicle inspection report (DVIR) in writing at the end of each day's work on each vehicle operated
- ▶ DVIR must contain:
 - Identification of the vehicle
 - List of any defects or deficiencies
 - Indication that no defect or deficiency was discovered
 - Signatures

Cargo Securement Rules

- ▶ New rules require motor carriers to change the way they use cargo securement devices to prevent articles from shifting on or within, or falling from commercial motor vehicles
- ▶ Changes may increase the number of tie downs used to secure

certain types of cargo

Cargo Securement Rules

- ▶ Articles of cargo that are likely to roll must be restrained by chocks, wedges, a cradle or other equivalent means to prevent rolling
- ▶ Articles of cargo placed beside each other and secured by transverse tie downs must be:
 - Placed in direct contact with each other
 - Prevented from shifting towards each other while in transit

Cargo Securement Rules

- ▶ Aggregate working load limit of any securement system used to secure an article or group of articles against movement must be at least one half the weight of the article or group of articles

Cargo Securement Rules

- ▶ When an article of cargo is not blocked or positioned to prevent movement in the forward direction:
 - One tie down needed for articles 5 ft or less in length and 1,100 lbs or less in weight
 - Two tie downs are needed if the article is 5 ft or less in length and > 1,100 lbs; or
 - Article is > 5 ft but < 10 ft, regardless of weight

Commodity-Specific Securement Requirements

- ▶ Logs
- ▶ Dressed lumber
- ▶ Metal coils
- ▶ Paper rolls
- ▶ Concrete pipe
- ▶ Intermodal containers
- ▶ Automobiles, light trucks, vans
- ▶ Heavy vehicles, equipment & machinery
- ▶ Flattened or crushed vehicles
- ▶ Roll-on/roll-off containers
- ▶ Large boulders

Hours of Service Regulations

- ▶ The purpose of the hours of service regulations is to ensure highway safety by reducing highway accidents that result from driver fatigue

Hours of Service Covers:

- ▶ For hire carrier
- ▶ Private carrier
- ▶ Carrier transporting solid waste
- ▶ Person transporting hazardous material of a type or quantity that requires the vehicle to be placarded
 - These rules do not apply to the operator of a lightweight vehicle (GVW of 10,000 lbs or less) except vehicles transporting passengers for hire or hazardous materials that must be placarded

Exceptions to Hours of Service Rules

- ▶ Private carriers transporting agricultural and other farm products within 50 miles of the carrier's business
- ▶ A farm operation and its vehicles are operated by the farmer or farm employee to transport agricultural products, farm machinery, or supplies to or from a farm
- ▶ Private carrier who is a public utility, electric co-op or telephone company
- ▶ Private carrier engaged in the transportation of construction materials, tools and equipment from shop to job site or job site to job site for the private carriers use in construction

Current Regulations

Property Carriers

11 hour rule

- ▶ No driver shall drive more than 11 hours following **10 consecutive hours off duty**

14 hour rule

- ▶ No driver shall drive after having been on duty 14 hours following **10 consecutive hours off duty**

Current Regulations Passenger Carriers

10 hour rule

- ▶ No driver shall drive more than 10 hours following **8 consecutive hours off duty**

15 hour rule

- ▶ No driver shall drive after having been on duty 15 hours following **8 consecutive hours off duty**

Current Regulations-Continued

60/70 hour rule

- ▶ No driver shall drive after having been on duty 60 hours in any 7 consecutive day period or 70 hours in any 8 consecutive day period
- ▶ For property carriers there is a restart of the driver's clock after a break of 34 consecutive hours off

Local Drivers (Property Carriers)

100 Air-Mile or Local driver **(115.08 statute miles)**

- ▶ If you operate within the 100 Air-Mile radius of your normal work reporting location you are exempt from logging your hours of service.

However, you must do the following:

Local Drivers (Property Carriers) continued

- ▶ Operate within that 115.08 mile zone
- ▶ The driver returns to the same work reporting location
- ▶ The driver is released from duty within 12 consecutive hours

- ▶ At least 10 consecutive hours separate each 12 hour shift

Local Drivers (Property Carriers) continued

- ▶ The driver does not exceed 11 hours driving in each shift
- ▶ The company maintains and retains for 6 months true and accurate time records (time cards or log sheets) showing:
 - a. The time the driver reports for duty each day
 - b. The time the driver is released from duty each day
 - c. The total hours on duty each day

Driver Security Awareness: At the Shipper

- ▶ Suspicious activity:
 - Most theft/hijacking events occur within a few miles of the shipper
 - Drivers need to be especially alert when departing any shipper
- ▶ Communication:
 - Frequent & regular check calls
 - Report unusual/suspicious activity immediately

Driver Security Awareness: At the Shipper

- ▶ Loading:
 - Most valuable in nose
 - Cargo to be secured from shifting/falling
- ▶ Documentation
 - Thoroughly reviewed & verified
 - Discrepancies settled before signing
 - Seal the trailer (have witness)

Driver Security Awareness: En Route

- ▶ Maintain regular communication:
 - Review company check call procedures
 - Company will assume something is wrong in the event a driver fails to check in
- ▶ Caution:
 - Never discuss any load-related information with anyone
 - This includes over the CB
 - Be cautious/suspicious

Driver Security Awareness: En Route

- ▶ Stop, park, & break safely:
 - High-traffic/reputable truck stops & rest areas only

- Know where not to park

Driver Security Awareness: En Route

- ▶ Be suspicious of anyone asking you to stop or pull over
- ▶ Inspect the vehicle & cargo frequently
- ▶ Prepare and execute a well-thought out trip plan

Driver Security Awareness: En Route

- ▶ So what if the worst happens?:
 - Review company policy regarding cargo theft & vehicle hijacking situations

Driver Security Awareness: At Destination

- ▶ Report in
- ▶ Match paperwork
- ▶ Inspect & break seals
- ▶ Inspect cargo
- ▶ Unload & report to your dispatcher

Driver Security Awareness Conclusion

- ▶ The world of a professional driver can be a very dangerous place. Drivers, their vehicles and cargo, are often the favorite targets of criminals. But, by increasing your awareness and following the procedures outlined here, you can increase your personal safety and security while on the road

Hazardous Material

- ▶ A "Hazardous Material" is any substance or material in a form which poses an unreasonable risk to health, safety, and property when transported in commerce.

Reportable Quantity

- ▶ Five Levels depending on Severity
- ▶ Amount must be in one package to meet requirements

- ▶ Depicted as RQ on package & documents
 - ▶ 1 pound
 - ▶ 10 pounds
 - ▶ 100 pounds
 - ▶ 1000 pounds
 - ▶ 5000 pounds

Placards, Labels

- ▶ DOT Placards and Labels

Hazardous Materials Classes

- ▶ CLASS 1—Explosives
- ▶ CLASS 2—Gasses
- ▶ CLASS 3—Flammable Liquids
- ▶ CLASS 4—Flammable Solids
- ▶ CLASS 5.1—Oxidizers
- ▶ CLASS 5.2—Organic Peroxides

Hazardous Materials Classes

- ▶ CLASS 6—Poisons
- ▶ CLASS 7—Radioactive Materials
- ▶ CLASS 8—Corrosives
- ▶ CLASS 9—Miscellaneous
- ▶ ORM-D—Consumer Commodities

Consumer Commodities

- ▶ Means a material that is packaged and distributed in a form intended or suitable for sale through retail sales agencies or instrumentality's for consumption by individuals for purposes of personal care or household use. This term also includes drugs and medicines.

Placards

- ▶ Each transport vehicle containing any quantity of a hazardous material must be placarded on each side and each end with appropriate placards
- ▶ Exceptions:
 - If transporting less than 454 kg (1,001 lbs.) of hazardous material by highway or rail listed in Table 2 of the DOT hazardous materials regulations (172.504)

Dangerous Placard

- ▶ The "DANGEROUS" placard is used when two or more classes requiring placarding are loaded on a single transport vehicle.
- ▶ If more than 1000 kg or 2206 pounds of one hazard class is loaded at one stop, you must use that hazard class placard.

Labeling

- ▶ Each person who offers for transportation or transports a hazardous material in a specific package or containment device, shall label the package or containment device with labels
- ▶ Cannot be on the bottom
- ▶ Opposite sides if possible
- ▶ Close to description and Markings

Shipping Documents

- ▶ Basic Shipping Description
 - Proper Shipping Name
 - Hazardous Material Class/Division
 - UN/NA Identification Number
 - Packaging Group—I, II, III
- ▶ Emergency Response Information
 - Phone Number or MSDS
- ▶ Shipping papers are found in drivers door or within reach of the driver

Hazardous Materials Table

- ▶ Where you find the proper shipping names, hazard class and division, labeling, packaging requirements, special provisions, air shipment and vessel storage requirements.

Emergency Response Information

- ▶ Copy of Material Safety Data Sheet (MSDS)
- ▶ Imprinted directly on the Shipping Paper
- ▶ Current Copy of the Emergency Response Guidebook (ERG) 2004

Emergency Response Guidebook

- ▶ Was developed for use by firefighters, police, and other emergency services personnel who may be the first to arrive at the scene of a transportation incident involving a hazardous material.

Emergency Response Guidebook

- ▶ YELLOW SECTION (Index list of dangerous goods in numerical order of ID number)
- ▶ BLUE SECTION (Index list of dangerous goods in alphabetical order of material name)
- ▶ ORANGE SECTION (Potential hazards, public safety and emergency response protocols)
- ▶ GREEN SECTION (Table of initial isolation and protective action distances)

Materials of Trade

- ▶ A Material of trade is a hazardous material that is carried on a motor

vehicle:

- For the purpose of protecting the health and safety of the motor vehicle operator or passengers (such as insect repellent or self-contained breathing apparatus);
- For the purpose of supporting the operation or maintenance of a motor vehicle, including its auxiliary equipment (such as a spare battery or engine starting fluid); or
- By a private motor carrier (including vehicles operated by a rail carrier) in direct support of a principal business that is other than transportation by motor vehicle (such as lawn care, plumbing, welding, or farm operations)

Material of Trade Limitations

- ▶ A Class 3, 8, 9, Division 4.1, 5.1, 5.2, 6.1, or ORM-D material contained in a packaging having a gross mass or capacity not over—
 - 0.5 kg (1 lb) or 0.5 L (1 pt) for Packing Group I material,
 - 30 kg (66 lb) or 30 L (8 gal) for a Packing Group II, III, or ORM-D material,
 - 1500 L (400 gal) for a diluted mixture, not to exceed 2 percent concentration, of a Class 9 material;

Material of Trade Limitations

- ▶ A Division 2.1 or 2.2 material in a cylinder with a gross weight not over 100 kg (220 lb);
- ▶ A non-liquefied Division 2.2 material with no subsidiary hazard in a permanently mounted tank manufactured to ASME standards at not more than 70 gallons water capacity;

Material of Trade Limitations

- ▶ A Division 4.3 material in Packing Group II or III contained in a packaging having a gross capacity not exceeding 30 ml (1 oz); or
- ▶ A Division 6.2 material (other than a Risk Group 4 material) that is a diagnostic specimen, biological product, or regulated medical waste. The material must be contained in a combination packaging

Material of Trade Limitations

- ▶ The gross weight of all materials of trade on a motor vehicle may not exceed 200 kg (440 lb), not including a permanently mounted tank (1500 L or less) of diluted Class 9 material

References

1. U.S. Department of Transportation, Federal Motor Carrier Safety Administration, 49

- CFR
2. U.S. Department of Transportation, Federal Motor Carrier Safety Administration
"Understanding Cargo Securement Rules"

Learning Exercise

1. Which of the following criteria indicate commercial vehicle status?
 - a. A vehicle with a GVWR of less than 5,001 pounds
 - b. A vehicle originally designed to carry 16 or more passengers including the driver
 - c. A vehicle which transports non-placardable amounts of hazardous materials
 - d. All of the above
2. Part of the requirement for maintaining a CDL is to have _____ a physical every three years.
 - a. True
 - b. False

Learning Exercise

3. Which of the following are not part of a pre-trip or post-trip inspection?
 - a. Horn
 - b. Emergency equipment
 - c. Bumpers
 - d. Coupling devices
4. Articles of cargo placed beside each other and secured by transverse tiedowns must be prevented from shifting towards each other while in transit.
 - a. True
 - b. False

Learning Exercise

5. In the hours of service regulations for property carriers, the 11 hour rule states that no driver shall drive more than 11 hours following 8 consecutive hours off duty.
 - a. True
 - b. False
6. For local drivers, if you operate within the 100 Air-Mile radius of your normal work reporting location you are exempt from logging your hours of service.

- a. True
- b. False

Learning Exercise

- 7. In terms of driver security awareness, which of the following are correct?
 - a. Most theft/hijacking events occur within a few miles of the shipper
 - b. The most valuable cargo should be placed in the nose of the trailer
 - c. Never discuss any load-related information with anyone
 - d. All of the above
- 8. The "DANGEROUS" placard is used when one hazard class requiring placarding is loaded on a single transport vehicle.
 - a. True
 - b. False

Learning Exercise

- 9. In which section of the Emergency Response Guidebook would you find the material name in alphabetical order?
 - a. Green
 - b. Yellow
 - c. Blue
 - d. Orange
- 10. A Material of trade is a non-hazardous material that is carried on a motor vehicle.
 - a. True
 - b. False

Answer Key

- 1. a
- 2. b
- 3. c
- 4. a
- 5. b
- 6. a
- 7. d
- 8. b
- 9. c
- 10. b

Volunteer Certification:

I certify I have reviewed the VA Driver Safety material and agree to abide by the directives herein.

Volunteer Printed Name: _____

Date of Training: _____

Volunteer Signature: _____